Committee on the Safe Mobility of Older Persons

Transportation Research Board
National Research Council
2101 Constitution Avenue NW
Washington, DC 20418

Committee A3B13
July 1996 Newsletter

COMMITTEE UPDATE

From the Chair

Secretary of Transportation Initiates Study on "Improving Transportation in a Maturing Society"

"The DOT should be constantly proactive regarding emerging safety and service problems in the nation's transportation system. One problem demanding attention is the ongoing demographic shift in the age of those who operate in our system.... We need to investigate the special needs of these operators and develop responses."

With these words, Transportation Secretary Federico Peña last December initiated a study on "Improving Transportation in a Maturing Society" (ITMS). The aim of the study is to develop a blueprint on how the U.S. transportation system should deal with the impact of the growing segment of older operators in all modes of commercial, recreational and personal transportation.

Secretary Peña's initiative is to be commended. Rather than sit back and let society fend for itself relative to the aging of both commercial and personal operators of transportation, the Secretary is being proactive in this area.

In many ways, the activity, which cuts across all modes of transportation, is following what our Committee has been engaged in for over six years—namely, ensuring the safe mobility of older people in the coming generations. As a matter of fact, the DOT strategic planning team has relied heavily on input from members and friends of the Committee.

The focus on the safe mobility of older persons is especially timely given demographic trends and the growth in the older population that is resulting from the aging baby boomers. New strategies are needed to meet their expectations for personal mobility throughout their lives. Special challenges are presented by those who postpone retirement and have on-the-job transportation needs. Included are the current cohort of experienced transportation operators who may wish to continue employment longer.

By anticipating emerging services and accessibility problems in the nation's transportation system, DOT's strategic planning hopes to develop comprehensive cross-modal strategies to stay ahead of societal changes and to build accommodation into the system.

As part of the strategic plan, the DOT conducted five expert panel sessions dealing with aging scenarios, medical research and practices, management practices, human factors and technology, and alternatives for meeting personalized mobility needs. Recommendations for the strategic plan are based on information obtained through the panel sessions, existing literature, and ongoing and proposed departmental and other programs of research, development and application.

Members and friends of the Committee should be proud of their contribution. I'm certain that when the Secretary presents the strategic plan, there will be quite a bit of work and action required of our Committee to aid the DOT and society at large in carrying out the intent of the strategic plan.

Stay tuned for developments.

John Eberhard

P.S.: This issue of the newsletter introduces new names at the editor's desk (see box on page 4). Tom Ranney, whose stewardship as editor has established a continuously rising standard of excellence, has moved on to assume chairmanship of the Vehicle User Characteristics Committee. As all of us who have worked with him know, he has made a lasting contribution to the Committee's work and to its communication with a worldwide readership. We thank him, wish him well in his new position, and hope to continue to draw on his expertise.

From the Editor

Working on this issue has been fun and exciting. I've enjoyed talking with many of you about your research and look forward to more of these conversations.

The newsletter has several important functions. One directly relates to a particular strength of this Committee: its diversity. The Committee brings together professionals from a wide range of disciplines who read different journals, attend different conferences and use different communication channels. The newsletter serves a genuine need in furthering the exchange of information and ideas across disciplines that too often don't talk to one another.

It can also serve as a catalyst for developing new partnerships. There are many more ideas in this field than there are funds. Partnerships and collaborations can be a way of more creatively using existing resources, even bringing in new groups and disciplines who in the past have had little involvement.

Beverly Foundation is delighted to be involved with the newsletter. John Luke, Senior Staff Writer for the Foundation, will work closely with me.

Keep us up to date on new developments you believe others should know about. Take the opportunity to comment, to suggest areas and topics that should be covered, to offer your own ideas and contributions—including editorials and editorial responses. Let us know what you've published. You may even want to post job openings.

It's your newsletter. Help us make it work for you. *Rhonda Aizenberg*

Inside

TRB NEWS

August 1 Deadline for TRB Paper Submissions

TRB's 76th Annual Meeting will be held January 12-16, 1997 in Washington, DC. TRB invites papers for presentation at the meeting and/or publication in the *Transportation Research Record* series. Cynthia Owsley is this year's Program Chair for Committee A3B13.

To be considered, papers must be received by August 1, 1996. The deadline for submissions is strictly enforced.

Papers should be original, address timely issues, have utility to practitioners and researchers, and must not be published elsewhere. Papers of a commercial nature will not be considered.

All papers must be accompanied by a Paper Submission Form. The form was revised for 1997 and includes a mailback portion to acknowledge receipt of the paper by TRB. (Last year's form should not be used.)

A 1997 *Information for Authors* brochure is available that includes full details on paper submission requirements and procedures. To obtain the brochure and a 1997 Paper Submission Form, contact TRB, 2101 Constitution Ave. NW, Washington, DC 20418; Telephone (202) 334-2933; Fax (202) 334-2003; e-mail rallen@nas.edu; Internet http://www.nas.edu/trb/meeting/call1997.html. □

August 1 Deadline for Papers on Consequences of Limiting or Stopping Driving

A number of studies are currently underway to examine what happens to individuals who reduce or stop driving. Committees A3B13 and A1E09 (Accessible Transportation and Mobility) will be co-sponsoring a conference session on this topic at the January TRB Annual Meeting. Papers presented at the session may become the basis for either a TRB Circular or a special edition of a yet to be determined journal. If you're involved in research on the consequences of driving limitation and cessation and would like to participate in the conference session, please contact John Eberhard (A3B13), NHTSA, 400 7th St. NW, Washington, DC 20590; Telephone (202) 366-5595; Fax (202) 366-7069; e-mail jeberhard@nhtsa.dot.gov. Or Larry Harman (A1E09), Monkley Center for Technological Applications, Bridgewater State College, Bridgewater, MA 02325; Telephone (508) 279-6144; Fax (508) 279-6121; e-mail lharman@bridgew.edu.

Papers or conference topic titles and abstracts are due by August 1. Those preferring to present a formal paper through the regular peer-reviewed paper channels of TRB are encouraged to do so, since it more readily guarantees publication of your work. □

30th Annual Human Factors in Transportation Workshop

Mark your calendar for Sunday, January 12, 1997 to attend the Annual Human Factors in Transportation Workshop. The Workshop is scheduled to precede the TRB Annual Meeting. As always, plan to convene at the Sheraton Washington Hotel.

Harvey Sterns recently represented Committee A3B13 at the Workshop planning meeting. Of over 30 topics considered, seven full-day and six half-day sessions were selected.

Two sessions deal directly with older driver safety issues. The first, chaired by Rich Marottoli and Leo Tasca and organized by Harvey Sterns, is a half-day session that will emphasize human and social factors of at-risk older drivers. (Another half-day session with the same theme focuses on young and aggressive drivers.) The second, a full-day session, will highlight engineering solutions to enhance safety and mobility of older persons. Here the focus is on recently completed research, demonstrations and engineering guidance developed during the past six years. Essie Kloeppel of SAIC, Inc., and Neil Lerner of COMSIS Corp. are organizing this session.

The Workshop brochure will be available in October. If you would like to receive a copy and are not already on the mailing list, contact Rick Pain, TRB, 2101 Constitution Ave. NW, Washington, DC 20418; Telephone (202) 334-2960; Fax (202) 334-2003; e-mail rpain@nas.edu. □

August 2 Deadline To Submit Abstracts for TRB Circular

Work is underway by the Public Policy Issues Subcommittee of Committee A3B13 to prepare a TRB Circular featuring papers on older driver policy issues. The goal is to facilitate a cooperative and effective communication exchange by researchers, policy makers and advocates.

Papers are invited on the following topics: emerging trends in older driver licensing legislation in North America; practical and policy considerations regarding medical reporting guidelines for older drivers; feasibility of providing a continuum of licensing options; strategies for ensuring validity and reliability of licensing tests and other performance assessments, and related policymaking implications; relative merits of testing for cause as opposed to age-based testing; balancing safety risks of licensing decisions with individual needs for mobility and wellness; and providing diverse mobility options beyond private ownership and use of a personal vehicle.

Abstracts of not more than 250 words should be submitted by August 2, 1996 to: Leo Tasca, Safety Research Office, Ontario Ministry of Transportation, 2nd Floor, West Building, 1201 Wilson Avenue, Downsview, Ontario, Canada, M3M 1J8; Telephone (416) 235-3623; Fax (416) 235-3633; e-mail tascale@epo.gov.on.ca. Or to Joseph F. Coughlin, EG&G Dynatrend, 55 Broadway, Cambridge, MA 02142; Telephone (617) 494-2193; Fax (617) 494-3688; e-mail coughlin@volpe3.dot.gov. □

Driver Programs Subcommittee Plans Midyear Meeting

The midyear meeting of the Driver Programs Subcommittee will be held September 30th (9 am - 5 pm) and October 1 (9 am - noon) at TRB headquarters in Washington, DC. Members and friends of Committee A3B13 are invited to attend. Ann Long Morris will chair the meeting, which will focus on licensing and managing drivers with functional disabilities. Specific topics to be addressed are delicensing processes, mobility consequences of delicensing, education and counseling for mobility, and implementation of delicensing programs.

A set of invited papers will be presented and discussed. If you're interested in presenting or just attending, a registration form can be obtained from Ann Long Morris at American Occupational Therapy Association, Inc., 1383 Piccard Drive, P.O. Box 1725, Rockville, MD 20849-1725; Telephone (301) 652-2682; Fax (301) 652-7711. □

FEATURES AND ANNOUNCEMENTS

Preserving "Driving Independence"

Larry Bowen
President, ADED
Susan Lillie
Publications Chair, ADED

Preserving and restoring driving independence and safety for persons with disabilities or aging-related impairments is the common goal of several groups of educators, health professionals and manufacturers. Since 1977, many of them have been members of the Association of Driver Educators for the Disabled (ADED), which has provided continuing education and liaison among members and other organizations having similar goals.

ADED's current roster includes 575 members. Members typically come from two groups: (1) those who provide assessment and training, including driver educators, physical and occupational therapists, rehabilitation engineers and kinesiotherapists, and (2) those who manufacture and modify vehicles, including automobile and adaptive equipment manufacturers and mobility equipment dealers.

Assessment of safe driving ability has been the organization's primary focus. Ongoing concern for quality assurance of the assessment process led the group to establish a certification program for Driver Rehabilitation Specialists. The first qualification exam, held last year, resulted in 89 applicants receiving certification. The exam will be offered again this August at the organization's annual conference in Dallas, Texas, August 24-27.

In addition to its continuing education and certification programs, ADED provides members with information and guidelines on recommended assessment practices, as well as guidance on establishing viable driving assessment programs in hospital, clinic or other settings.

To learn more about ADED programs or to receive information on the 1996 conference, contact Ricardo Cerna, ADED Secretariat, P.O. Box 40, Edgerton, WI 53534; Telephone (608) 884-8833. □

Starting a Driving Rehabilitation Program

For those interested in starting a driving rehabilitation program, an 8-page document entitled "What To Consider When Starting a Driving Program," developed by occupational therapist April Moell, is available from the Association of Driver Educators for the Disabled (ADED). The following is a summary of Moell's suggestions, addressed to administrators, occupational and physical therapists, driving instructors, and anyone else who is interested in working with disabled clients. You're encouraged to contact ADED, which can put you into contact with others who've started these programs.

Gauging the Market

In considering starting a new venture of any kind, the first question is fundamentally a marketing one: Is there a need? Identify other providers that are out there (including driving schools that serve disabled clients), what they offer, and what you could do differently or better. A new program should fill a gap in services in your area—and your "area" should extend at least 30 miles in all directions.

When individuals need driving assessment, where do they now go? Are your current patients or clients asking for or needing help with driving? If others can meet most needs, would it be more cost-effective to arrange referrals for your clients?

Defining Your Program

Look carefully at your current patients or clients, because they will likely be the source of most of your driving rehabilitation business, at least in the beginning. Their needs—along with the presence and offerings of existing providers—should figure heavily in the type of program you choose to offer.

The ideal assessment program includes clinical assessment, simulator screening and on-the-road evaluation. Do you have the resources to incorporate all of these elements in your program?

What's Involved in a Driver Rehab Assessment?

Two components make up a driver rehabilitation assessment—a group of in-clinic tests and a road test. In-clinic tests address vision, physical measurements (strength, range of motion, coordination, sensation), perception and cognition. Perception and cognition are tested through a range of mostly pencil-and-paper tabletop tasks including Symbol Digit Modalities and Trailmaking. Some facilities also use computers and simulators.

The road test involves all behaviors related to driving, from getting into and out of the vehicle, securing seat belts and adjusting seats and mirrors, to task performance behind the wheel. The person is set up in a vehicle that includes appropriate adaptive equipment, and actual driving performance is assessed in a variety of traffic conditions. After the session, a debriefing is provided that may include recommendations for driver training and/or vehicle modifications. □

Would it also be desirable and feasible to include follow-up training in your program? If you want to provide training, you need to find out whether a driving-school license is required. You also need to become familiar with your state's requirements for drivers with medical conditions and disabilities.

A key consideration, for both the prospective provider and the client, is the fact that because driving is not considered a medical necessity under Medicare or Medicaid, assessment and training costs aren't reimbursable. Some private health-insurance plans may cover part of the costs, but the coverage is rare and highly variable. Most driving assessments cost between $200 and $500. Training can cost from $40 to $95 an hour, and most clients need, on average, 8 to 10 hours. At the low end, then, the total would be $200 for an assessment; at the high end, $1450 for assessment and training.

This means you need to design a program your clients will be able and willing to pay for, largely out of their own pockets.

A driving rehabilitation program can be time-consuming and costly. Salaries, space, screening equipment, supplies, possibly a simulator and one or more vehicles—all must be taken into consideration, along with insurance, licensing, marketing, maintenance, staff education and professional fees.

Probably the most important aspect of your program and its sustainability is administrative support strong enough to carry the program at least through the startup and development period. This is the time when you'll need to build the network of relationships with physicians, therapists, case managers and other rehabilitation facilities that will be the source of long-term growth. Even if you've accurately gauged your market and designed a program that fills a real need, it will take time for the program to begin making money.

Finally, who can you learn from? Those who will be important to you in the long run are also the ones who can help you get started. If there are driving rehabilitation programs nearby, visit them. Making contact with local driving instructors is also a good idea. If a local college has a driver safety curriculum, you may want to take some courses.

If you're a driving instructor, spend some time with occupational and physical therapists to become more familiar with disability issues. It's especially important to understand perceptual and cognitive problems, because some errors made by clients with these deficits can look like new-driver errors.

No matter what your specialty, groups like the Association of Driver Educators for the Disabled (ADED), Area Agencies on Aging and AARP can assist by providing information and directing you to helpful contacts. In addition to its national office, ADED has local chapters, and one may be located near you. □

AAMVA Forms Older Driver Working Group

The American Association of Motor Vehicle Administrators (AAMVA) has formed an Older Driver Working Group within its Public Affairs and Consumer Education (PACE) Committee. Chaired by Andy Nelson, Director of Communications for the Connecticut Department of Motor Vehicles, the 22-member group is charged with creating greater awareness of older driver issues and concerns among all state and provincial licensing agencies.

The new group has four priorities:

1. Determine how each licensing agency handles older driver issues through graduated licensing, age-based testing, responses to inquiries or reports about older drivers, promotion of transportation and mobility alternatives, and other strategies.
2. Encourage interest in, and response to, older driver issues and solutions by all agencies. Identify older driver program strategies AAMVA member jurisdictions can adopt.
3. Initiate widespread education of professionals involved with older drivers—including physicians, occupational therapists, police and caregivers—in the importance of understanding older driver behavior and helping older drivers transition through stages in their driving.
4. Working in concert with external groups such as NHTSA, AARP, and the National Safety Council, produce an array of information materials (pamphlets, posters, fact sheets and press kits) that PACE members and other organizations can use to promote older driver issues and solutions.

In keeping with its public affairs and consumer education mission, the group is working on several projects aimed, in Nelson's words, "at providing light and information on the concerns raised by a graying society's need to stay mobile." Two high-priority information packages currently under development are an older driver resource guide and a press information kit.

The goal for the resource guide is to identify the best public information resources currently available on older driver licensing, safety and mobility. The Working Group asked Kent Milton, formerly of the California Highway Patrol and now a consultant to AAMVA and NHTSA, to survey licensing agencies to determine what materials they're using. The survey turned up an array of written and audio-visual materials that address key aspects of the older driver safety-mobility issue. For the most part, the materials are aimed at older drivers and emphasize normal changes that accompany the aging process, how these changes affect driving, and general tips on how to compensate for them. Some materials speak to the network of people and organizations surrounding the older driver, especially relatives and friends.

Many items were produced by licensing agencies themselves, while others originated in the private sector. A catalog of these materials is available from Jamie Lacey, AAMVA, 4301 Wilson Blvd., Ste. 400, Arlington, VA 22203-1800.

The listings in the AAMVA catalog are being merged with additional resources identified in a separate effort being funded by NHTSA. As part of this project, which involves LIFESPAN Associates, Inc., Beverly Foundation and National Mobility Institute, over 100 brochures, guidebooks and videos were systematically reviewed in terms of content. Most of the materials were developed by auto clubs, senior interest groups, professional membership organizations and licensing agencies. An inventory of these materials is available from Beverly Foundation, 44 S. Mentor Ave., Pasadena, CA 91106.

As a next step, the Older Driver Working Group plans to identify and summarize the best of the existing materials in a guidebook to be published by AAMVA.

The Working Group is also developing a press information kit on older driver safety. The kit will include information that gives a balanced and accurate overview of the status of older drivers. It will also highlight elements of successful license screening and evaluation programs now being identified by AAMVA's Driver Screening and Evaluation Working Group, chaired by Pete Nunnenkamp. □

The Newsletter for the Committee on the Safe Mobility of Older persons is published by TRB twice each year.

Committee Chair:	John Eberhard
TRB Staff:	Rick Pain
Newsletter Editor:	Rhonda Aizenberg
Sr. Staff Writer:	John Luke
Editorial Office:	Beverly Foundation 44 S. Mentor Ave. Pasadena, CA 91106
Telephone:	(818) 792-2292
Fax:	(818) 792-6117
e-mail:	bf3@ix.netcom.com

What Do People Want to Know About Older Drivers?

Licensing Agencies Reveal Questions They're Asked

What questions do driver licensing agencies get asked about older drivers? And who asks?

These are the questions the American Association of Motor Vehicle Administrators (AAMVA) recently put to its member agencies in the U.S. and Canada. The responses will be used to better equip motor vehicle department personnel to respond to the public on older driver issues.

Questions most often asked of licensing agencies fall into nine general topic categories and, in descending order, relate to:

1. Driving cessation regulations, including reporting procedures
2. Age-based testing
3. Impact of vision and medical problems on driving safety
4. Graduated licensing
5. Crash statistics on older drivers
6. Driver education and training
7. Roles of medical professionals
8. Roles of law enforcement
9. Miscellaneous—e.g., definition of "older driver"

Typical questions are "How can we stop an older person from driving?", "Does your state have age-based driver testing requirements?", "If your department receives a written request to reexamine an older driver, which tests do you administer?" and "What is the role of police officers and medical professionals in identifying potential problem older drivers?"

One thing the survey makes clear is that every state would be well advised to lay out its process for dealing with older and/or impaired drivers in a form that is fully understood by agency staff and can be readily described to the public. The survey provides some guidance in developing standardized answers that could be used in responding to inquiries in all jurisdictions, but this task is complicated by differences in regulations and procedures across states and provinces. □

AAA Foundation Invites Proposals

The AAA Foundation for Traffic Safety is interested in sponsoring research and educational projects leading to real-world improvements in traffic safety. An independent, not-for-profit research and educational organization, the Foundation was established in 1947 to reduce traffic collisions, injuries and deaths.

Especially encouraged are innovative proposals to develop effective new educational materials carefully targeted at problem behaviors. Projects that focus on older driver safety and strategies for preventing impaired driving—including impairment caused by drowsiness, fatigue and prescription drug use—are among the issues that are of interest to the AAA Foundation.

Proposals should specify the project's objective(s) and need; how the results can be used to improve traffic safety; qualifications of project team; project duration and schedule; and proposed budget. Proposals should not exceed 10 double-spaced pages. Three copies should be submitted.

You're invited to call and discuss your proposed project with AAA Foundation staff. Proposals should be submitted by no later than October 31, 1996. Funding decisions will be made in February 1997. Contact Dave Willis, Executive Director, AAA Foundation for Traffic Safety, Suite 201, 1440 New York Avenue NW, Washington, DC 20005; Telephone (202) 638-5944. □

Elder Law Attorneys Look at Transportation Planning

The importance of providing transportation options for older persons was the focus of a roundtable discussion at the semi-annual meeting of the National Academy of Elder Law Attorneys in Cambridge, Massachusetts, in May. Facilitated by Tim Vogel and Katherine Freund, the discussion highlighted the relevance of transportation planning when addressing long-term care needs.

Vogel noted that elder law attorneys frequently discuss with clients the need to make appropriate residential and care arrangements to maintain the highest degree of independence at the most affordable cost. However, such arrangements may quickly collapse if they don't include transportation to access everyday essentials. Vogel urged his peers to encourage clients who still are independent to anticipate and plan for alternative means of transportation.

Freund shared with the group her work in establishing the Independent Transportation Network (ITN), which, using trained drivers, on-demand automobiles and door-to-door service, is intended to approximate the convenience, comfort and flexibility of the privately owned automobile. She noted that the privately funded ITN "is an attempt to find a safe, affordable and desirable transportation alternative for millions of people who, sooner or later, will not be able to drive but who will want to remain in their homes, leading independent lives." (*For additional information on the ITN, see the September 1995 issue of this newsletter.)* □

Older Drivers Featured at California Traffic Safety Summit

Older driver safety was the subject of a panel session at "OTS Summit '96—New Horizons in Traffic Safety," held in April. The conference, sponsored by California's Office of Traffic Safety, brought together representatives from law enforcement, driver licensing, policy development and research.

The panel was organized and led by Rhonda Aizenberg of Beverly Foundation. Joining her to add several different perspectives on the issue were John Eberhard of NHTSA, research scientist Mary Janke of the California DMV, Certified Driver Rehabilitation Specialist Susan Lillie and California Highway Patrol Lt. Tim Saxon.

Aizenberg led off the session by profiling the crash experience of older drivers. Using statewide data for California, she discussed the relationship between age and driving safety, and identified important age differences and similarities in collision correlates and outcomes.

Eberhard provided supplemental data for the U.S. that demonstrated similar collision patterns. He also summarized DOT's and TRB's involvement in older driver safety research, noting that a key focus of the DOT plan is to identify and mobilize

professional and informal resources who are in a position to detect and assist high-risk older drivers.

Evaluating New Driving Tests
Mary Janke reviewed California laws and regulations that impact older drivers, focusing on reporting regulations and follow-up procedures and outcomes for medically impaired drivers. Since 1939, healthcare professionals in California have been required to report losses or lapses of consciousness for all persons over age 14 to state authorities. In 1988, the law was amended to also mandate reporting on Alzheimer's and related dementias, making California the only state to require reports on these conditions. During that year, about 13,000 drivers aged 60 and above—less than half a percent of licensed drivers in that age group—lost their driving privileges, at least temporarily, because of physical or mental impairments.

Except for requiring drivers aged 70 and above to apply for license renewal in person, California has no special testing procedures either for older drivers or for those who may be physically or mentally impaired. That could soon change. The DMV is currently evaluating a battery of tests that may help in identifying drivers with physical or mental problems.

The tests are organized into three stages. The first, intended for license applicants, aims to identify impaired drivers who haven't been reported. First-stage tests assess visual acuity and tracking ability, as well as traffic-sign recognition and knowledge of the vehicle code.

Second-stage tests would be administered to drivers already reported to the DMV and to applicants who perform poorly in first-stage testing; the tests would include cue recognition and reaction time in a driving simulator.

The third stage would consist of road testing in unfamiliar neighborhoods and, if necessary, on familiar roads. Exercises would be required that might especially challenge people with early dementia: destination finding and following a sequence of instructions.

Rehabilitation Options
Driver rehabilitation specialist Susan Lillie presented an overview of a systematic, medically based evaluation model she and others have developed for drivers with multiple medical conditions or disabilities, and for those who have been identified by family members or partners as being potentially unsafe. Lillie identified some of the vehicle modifications that can compensate for functional restrictions and outlined the kinds of treatment plans she devises for remediation or compensation.

The View from Law Enforcement
CHP Lt. Tim Saxon shared citation data substantiating the dominance of right-of-way violations and improper turns among older drivers. Acknowledging the negative stereotype that tends to skew public discussion about older drivers, Saxon said they are still among the safest drivers on the road, in large part because of their lifelong on-the-road experience. □

ITS Forms Older Driver Subcommittee

The Safety and Human Factors Committee (S&HFC) of the Intelligent Transportation Society of America has formed an Older Driver Subcommittee to address the opportunities and constraints intelligent transportation systems present for older operators. The subcommittee, chaired by Allan Tull, Board Member of the American Association of Retired Persons, will initially focus on: discussing technological opportunities to improve older drivers' performance in operating vehicles; evaluating ITS opportunities to improve accessibility and mobility; reviewing concepts for ITS applications such as collision avoidance and advanced traveler information systems to determine their impact on older drivers' ability to perform required tasks; and providing information to the ITS community on the transportation needs and requirements of older drivers, including alternatives to automobile travel. For additional information, contact Allan Tull (203) 245-7075. □

IATSS Research Polls Readers

Readers worldwide are invited to comment on the newsworthiness in their countries of the following topics as special-issue themes for *IATSS Research,* the journal of the International Association of Traffic and Safety Sciences:

- Innovative regulation policy for land transport industries
- Current status of safety sciences and technology in various transportation modes
- Driver training and licensing

Send comments and suggestions for contributions to *IATSS Research,* Editorial and Advisory Board, IATSS, 6-20, 2-chome, Yaesu, Chuo-ku, Tokyo 104, Japan; Fax +81 3 3272 7054; e-mail nad02356@niftyserve.or.jp □

ONGOING RESEARCH

National Highway Traffic Safety Administration (NHTSA)

U.S. Department of Transportation
400 7th Street SW
Washington, DC 20590
Contact: John Eberhard
(202) 366-5595

NHTSA continues to pursue implementation of its *Traffic Safety Plan For Older Persons* (DOT HS 807 316). The plan was originally developed in 1988 in response to the Transportation Research Board publication, *Transportation in an Aging Society*. An update completed in 1993, at the request of Congress, outlines major agency efforts to improve the safety of older drivers, vehicle occupants, and pedestrians. Current and upcoming projects are described below.

Problem Identification

Establish the Crash Risk for Specified Medical/Functional Conditions. This interagency agreement with Oak Ridge National Laboratories is identifying existing databases and conducting secondary

analyses to better identify older driver issues. Analyses currently underway will identify older driver problem groups requiring special attention. Anticipated completion date: 1997. Principal Investigator: Pat Hu, Oak Ridge National Laboratories (423) 574-5284.

A Model System to Improve Self and Institutional Regulation of Driving by Older People. Older driver groups who need assistance determining when to stop or alter their driving are being identified, along with support resources in the social service and aging network who come into contact with them and can provide needed assistance. Guidelines for detecting limitations and for providing help in driving decisions are being developed. Anticipated completion date: 1997. Principal Investigator: Barbara Cohen, R.O.W. Sciences, Inc. (301) 294-5471.

Analyze Vehicle Crashworthiness for Older Occupants. NHTSA is analyzing crash data to compare injuries received by older and younger motor vehicle occupants restrained by lap and shoulder belts and/or air bags. Since older persons are more likely to be involved in side-impact crashes, changes in injury patterns are being monitored over the next few years as the new side-impact regulation, requiring manufacturers to install side padding and structural improvements, is phased in. Anticipated completion date: Ongoing. Contact: Cathy McCullough, NHTSA (202) 366-4734.

Intersection Negotiation Problems of Older Drivers. The causes of older driver problems at intersections, especially those involving left turns, are being investigated. Findings will be used to develop new information and training materials for older drivers. Anticipated completion date: 1997. Principal Investigator: Loren Staplin, Scientex Corp. (215) 699-8539.

Family and Friends Reporting and Assisting Problem Older Drivers. Guidelines and program materials are being developed to facilitate involvement by family and friends in the driving decisions of problem older drivers. Focus groups are underway to explore how family and friends help high-risk older drivers and how to overcome barriers to their involvement. An in-depth survey of eight state licensing agencies is being initiated to examine actual experiences with family, friends and others reporting potentially unsafe older drivers to state authorities. Surveys have been conducted with professionals involved with or concerned about older driver safety to determine information and resource needs. Anticipated completion date: December 1996. Principal Investigators: Ronni and Harvey Sterns, LIFESPAN Associates, Inc. (330) 867-6336

Older Driver Family Assistance. This 402 project will identify and develop strategies to help families assist older persons with driving difficulties. Barriers to family involvement and the role of safety and other professionals in supporting concerned family members are being determined. A handbook will be developed of recommended strategies to assist families. Results will be incorporated into a preexisting caregiver assistance program in New York. Anticipated completion date: 1997. Project Leader: Philip LePore, New York State Department of Aging (518) 486-2727.

Identify Specific Vehicle Design Practices That Enhance Older Driver Crash Avoidance. NHTSA is examining vehicle design practices and advanced-technology crash-avoidance countermeasures to determine which have the greatest safety potential for older drivers. Specific practices and countermeasures will be recommended. (As a standard practice, NHTSA considers the needs and functional limitations of older drivers in virtually all of its crash avoidance research.) Anticipated completion date: Ongoing. Contact: Michael Perel, NHTSA (202) 366-5675.

Program Development

Update National Medical Standards and Examiner Training Programs. Findings and conclusions of current research and literature will be used to refine existing and develop new medical standards for physicians and other practitioners to use in identifying high-risk problem drivers. State licensing agencies will be provided with an updated guidebook, "Functional Aspects of Driver Impairment - A Guide for State Medical Advisory Boards," which includes recommended medical standards for making licensing decisions. Support is also being provided to the AAMVA for updating information on older drivers contained in training materials developed for driver license examiners. Anticipated completion date: 1997. Principal Investigator: Elaine Petrucelli, Association for the Advancement of Automotive Medicine (708) 390-8927.

Develop Performance Assessment Techniques. Under a cooperative agreement with the California Department of Motor Vehicles, tests are being selected and designed to evaluate the status of drivers with dementia or age-related frailties. Anticipated completion date: Spring 1997. Principal Investigator: Mary Janke, California DMV (916) 657-7032.

Upcoming NHTSA Activities

Improve Safe Mobility of Older Persons. Funded by NHTSA and the Federal Highway Administration, this study will establish requirements for identifying, developing, demonstrating and implementing measures that would allow older persons to safely extend their driving years. Research thrusts address improved driving skills, driver assessment, cognitive retraining, technology-based cognitive aids, enhanced assistive transportation and use of emerging technology as a potential surrogate for certain types of travel. Anticipated start date: Summer 1996

Health Community Involvement with Problem Older Drivers. Health care disciplines that have contact with problem older drivers will be identified, and ways will be assessed in which they can be more involved in advising their patients/clients about driving modifications and reporting them, as needed, to appropriate state authorities. A "how to" kit will be developed for health care providers working with older drivers and families on needed driving adjustments. Anticipated start date: October 1996.

Model Driver Screening and Evaluation Program. Recently created screening and assessment procedures will be identified, evaluated and classified by purpose and target conditions. The degree to which the procedures are suitable for (or adaptable to) making recommendations about driving decisions and licensing actions will be determined. Testing procedures will be modified or developed, as needed, and pilot tested. Anticipated start date: October 1996.

Validate Statistical Models Relating Functional Limitations to Driving Cessation and Crash Involvement. Models of driving cessation and crash involvement developed by Oak Ridge National Laboratories with the Iowa EPESE data will be validated with additional data bases for

other locations (e.g., Marin County, CA; Salisbury, MD). Anticipated start date: Summer 1996.

Federal Highway Administration (FHWA)

U.S. Department of Transportation
6300 Georgetown Pike
McLean, VA 22101
Contact: Truman Mast (703) 285-2404

Improved Highway Travel for an Aging Population

In 1989 a "High Priority Area" was initiated by the Federal Highway Administration's Human Factors Safety Research Program to address problems faced by older road users. Age-related changes in cognitive functioning, perception and psychomotor limitations are issues being addressed under this High Priority Area. The projects are identifying, developing and evaluating a variety of engineering enhancements to the highway system to meet the needs of older road users. This High Priority Area is currently nearing completion. Projects still in progress are described below.

Pavement Markings and Delineation for Older Drivers. The pavement marking and delineation needs of older drivers are being identified and evaluated. Findings show that combinations of treatments that include two elements (both edgeline delineation and off-road elements) are more effective than any single treatment for all age groups, but especially for older drivers. Recommendations are being developed for changes in current delineation and pavement marking treatments and in engineering guidelines for enhanced delineation systems. Anticipated completion date: Summer 1996. Contact: Elizabeth Alicandri, FHWA (703) 285-2415.

Traffic Operations Control for Older Drivers and Pedestrians. Alternative designs in intersection traffic operation controls are being evaluated for use in rural and urban settings to help accommodate the perceptual, cognitive and psychomotor capabilities of older drivers and pedestrians. Intersection features examined include traffic signal display type, signal placement and phasing, off-peak and on-peak operations, day and night operations, left turn arrows, intersection geometry and intersection visual complexity. Findings show that a pedestrian signal education placard does not change pedestrian behavior at intersections and that there is a general misunderstanding of the protected phase of left turn protected/permitted signals. Older drivers tend to believe the permitted phase gives them the right of way. Recommended changes to current intersection traffic control device standards to accommodate older drivers and pedestrians will be the primary product of this research. Anticipated completion date: Summer 1996. Contact: Elizabeth Alicandri, FHWA (703) 285-2415.

Intersection Geometric Design for Older Drivers and Pedestrians. The capabilities of older drivers and pedestrians are being identified that most significantly reflect their needs and impact their abilities at intersections. Results will be used to identify geometric and operational aspects of intersections (e.g., one-way designations, signal time) that can be modified to better serve older drivers and pedestrians. The findings will also be used to identify those situations where geometric design and operational changes are not feasible or would not ameliorate problems for older road users at intersections. Anticipated completion date: Fall 1996. Contact: Elizabeth Alicandri, FHWA (703) 285-2415.

Investigation of Older Driver Freeway Needs and Capabilities. Characteristics of older drivers that affect their needs and capabilities for freeway driving are being identified, as well as elements of the freeway environment that cause them problems. Future research will be recommended to develop guidelines for countermeasures that address problems faced by older drivers. Anticipated completion date: Summer 1996. Contact: Elizabeth Alicandri, FHWA (703) 285-2415.

Delineation of Hazards for Older Drivers. Object markers are used to delineate obstructions within or adjacent to the roadway. Over the years, the exact meaning of these markers has become unclear. Experts disagree on whether the markers should convey the presence of an object or a sense of hazard to the driver. There is also confusion between the use of object markers and standard delineation and marking treatments.

This study will achieve four objectives: (1) identify conspicuity, recognizability and comprehensibility problems with object markers, particularly as they relate to the needs and capabilities of the older driver; (2) determine the effect of enhancements in the design and implementation of object markers, including an analysis of the impact of these changes on the comprehension of other devices; (3) perform cost/benefit analyses associated with changes in the design and implementation of object markers; and (4) make recommendations regarding changes to the current design and implementation of object markers and discuss potential effects of such changes on safety and traffic operations.

Preliminary results show that subjects correctly comprehend only 36% of object markers presented and older drivers produce significantly more incorrect responses than younger drivers. In general, findings also show that hazard markers have little effect on subjects' perception of hazards; they have the greatest effect on those objects that are already conspicuous, such as trees, poles and bridge abutments. Finally, the Type 3 markers (vertical, striped) are shown to be more effective than both Type 1 (yellow diamond) and Type 2 (small yellow rectangle) markers. Anticipated completion date: Winter 1996. Contact: Elizabeth Alicandri, FHWA (703) 285-2415.

Computer-Aided Techniques for Optimizing Symbol Signs. A system is being developed using the recursive blurring technique as an aid for developing, modifying and improving symbol signs. This computer-based system will be developed for use by highway sign designers to provide a more efficient and cost-effective means of ensuring high levels of conspicuity, recognizability and comprehension. Anticipated completion date: Spring 1997. Contact: Elizabeth Alicandri, FHWA (703) 285-2415.

Integration of Older Drivers and Highway Safety Research. All results obtained in the FHWA "Improved Highway Travel for an Aging Population" High Priority Area, and data and information from other sources, are being marshaled and reviewed. A state-of-the-art synthesis describing the relationships between older driver needs and capabilities and highway issues is being developed. The findings will be incorporated into a handbook for engi-

neers. Gaps in knowledge will also be identified, and recommendations for a comprehensive research program for FHWA to implement over the next five to seven years will be developed. Anticipated completion date: Spring 1997. Contact: Joseph Moyer, FHWA (703) 285-2008.

Federal Transit Administration (FTA)

U.S. Department of Transportation
400 7th Street SW
Washington, DC 20590
Contact: Stewart McKeown
(202) 366-0244

Deployment of the Independent Transportation Network. Building on the results of previous research and experience with the Independent Transportation Network (ITN), this two-year project is intended to bring the ITN to the point of financial independence and explore the feasibility of using intelligent transportation system applications such as smart cards and geographic information systems to predict future markets. Anticipated completion date: 1998; Project Director: Katherine Freund (207) 828-8608.

University Transportation Centers Program (UTCP)

U.S. Department of Transportation
400 7th Street SW
Washington, DC 20590
Contact: Elaine Joost (202) 366-5442

Created in 1987, the UTCP is charged with advancing U.S. transportation-related technology and expertise through education, research and technology transfer. Ten Regional and three National Centers of Excellence in Transportation Research have been established through the UTCP. Sixty-seven universities currently participate in the program.

Enhancing Information Transfer for the Older Driver. Results of research in sensory and cognitive performance of older drivers over the past decade will be synthesized and summarized in a design guide for use by municipal and state traffic engineers. Anticipated completion date: October 1996. Principal Investigator: Rodger Koppa, Texas A&M University (409) 845-3540.

National Institute on Aging (NIA)

7201 Wisconsin Avenue
Bethesda, Maryland 20892
Contact: Jared B. Jobe (301) 496-3137

Evaluation of a Medical Intervention to Reduce Crash Involvement and Injuries in Older Drivers. The effects of cataract surgery on driving habits, mobility and crash risk are examined for a sample of older adults. Changes in vision, cognition, general and psychological health, driving habits and activities of daily living are evaluated. Principal Investigator: Cynthia Owsley, University of Alabama at Birmingham (205) 325-8635.

Evaluation of a Behavioral Intervention to Reduce Crash Involvement and Injuries in Older Drivers. A behavioral testing and retraining program is examined to improve visual attention deficits previously shown to be predictive of crash frequency in older drivers. The project has two primary objectives: (1) *Evaluate the UFOV as a functional test of driving competence.* The Useful Field of View (UFOV) is being evaluated prospectively in the field to determine its effectiveness as a predictor of driving performance on the road, simulated driving performance, future vehicle collisions, and continued mobility. Data on UFOV reductions are being obtained simultaneously with indices of visual function, mental status and cognitive function to evaluate batteries of predictors. (2) *Evaluate the UFOV as a behavioral intervention to improve functional skills necessary for driving competence.* The UFOV is being evaluated prospectively at multiple sites with varying populations to determine whether it can be used to prolong driving and reduce collisions among older drivers. Principal Investigator: Karlene Ball, University of Alabama at Birmingham (205) 975-2290.

Objective 1—Evaluation of the UFOV As a Functional Test

This objective is being pursued through collaborative activities as follows:

Salisbury Eye Evaluation Study. This is a large sample epidemiological study which examines the association between specific components of visual loss, including UFOV, and specific types of functional disability. The second wave of data collection is currently underway. To date, results show that each of the vision tests (acuity, contrast sensitivity, disability glare, stereoacuity, visual fields and UFOV loss) are significantly associated with perceived difficulty in driving after adjusting for age, race, gender and education. Multiple regression analyses reveal significant independent contributions of acuity, contrast sensitivity, stereoacuity and visual fields. The findings are consistent with previous results indicating that individuals with reduced attentional function are less aware of their impairments than those with vision losses. Project Leader: Gary Rubin, John Hopkins University (410) 550-6429.

Alzheimer's Disease and Driving Performance. The UFOV is being evaluated as part of a larger study on the effects of Alzheimer's Disease (AD) on driving performance. Participants are in varying stages of the disease and have had in-clinic and on-road assessments. Data collection is completed. Results reported at a recent conference (Alzheimer's Disease and Driving, May 17-18, 1996 at Washington University, St. Louis) indicate that the UFOV is strongly related to passing an on-the-road driving evaluation, and that attentional measures like the UFOV are better predictors of driving performance in mild AD than the diagnosis itself. Project Leader: Linda Hunt, Washington University, St. Louis (314) 362-6911.

Alzheimer's Disease and Driving Performance. The UFOV is being evaluated as part of a larger study investigating the effects of Alzheimer's Disease and driving performance. The primary goal of the project is to develop fair and accurate criteria for determining whether older individuals, and especially those with AD, remain fit drivers. The effects of UFOV reduction on driving performance in the Iowa Driving Simulator (IDS) are examined. UFOV loss correlated with an increased number of crashes in the IDS, resembling the relationship of UFOV loss to state reported crashes reported earlier in the literature. The AD drivers showed significantly greater reduction in the UFOV and significantly more crash involvement than an age-matched control group. Project Leader: Matthew Rizzo, University of Iowa (319) 356-8755.

Prospective Driving Study. This project involves a prospective evaluation of risk factors for crash involvement among a community dwelling sample of older drivers. To date, results show that only 26% of drivers identified as high risk remain crash

free for a period of three years, while 97% of low risk drivers remain crash free. Project Leaders: Karlene Ball (205) 975-2290 and Cynthia Owsley (205) 325 -8635.

Objective 2—Evaluation of the UFOV as a Behavioral Intervention

This objective is being pursued with different study populations and through collaborative activities as follows:

Subjects Referred for Driving Evaluation. This study involves a population referred by physicians to a driving evaluation program. Project Leaders: Karlene Ball (205) 975-2290 and Thomas Kalina, Bryn Mawr Rehabilitation (610) 251-5688.

Referrals from Insurance Records. This study involves a population recruited through insurance records. Project Leaders: Karlene Ball (205) 975-2290 and Christie Branch, Rehabilitation Institute of Chicago (312) 908-6277.

Volunteers from SBIR Project. This population consists of volunteers recruited through an SBIR Phase II project. During the first two years of the study, 456 older drivers were screened for attentional difficulties (UFOV reduction) and those with a restriction were recruited for a training study. Some participants received UFOV training, some received driver simulator training and others served as age-matched controls. In the first follow-up, the UFOV training was shown to transfer to improved stopping time in a driving simulator and had a significant reduction in hazardous driving maneuvers during an on-road driving evaluation (relative to the simulator and control group performance). At the 18 month follow-up, the training benefits had waned, but performance was still significantly better than pre-training levels. Anticipated completion date: August 1996. Project Leader: Daniel Roenker, Visual Resources, Inc.

Community-Based Volunteers. This population consists primarily of volunteers recruited from the community. Project Leader: Linda Hunt, Washington University, St. Louis (314) 362-6911.

Centers for Disease Control and Prevention

4770 Buford Highway NE
Atlanta, GA 30341
Contact: Julie Russell (404) 488-4652

Health Status and Driving. The relationship between health status and driving is examined with data collected from an annual mail survey and from personal visits with residents in a California retirement community. Health indicators examined include medical condition, functional ability and use of medications. Indicators of driving patterns include crash frequency and driving limitation or cessation. Main reasons why older adults limit or stop driving and health measures that best predict driving status and ability are identified. Anticipated completion date: June 1996. Principal Investigator: Ann Dellinger, Centers for Disease Control and Prevention (770) 488-4811.

Health Status and Crash Risk. The 1995 Florida Behavioral Risk Factors Surveillance System, a statewide sample telephone survey, requested information on driving patterns from respondents aged 55 and above. These data will be combined with a database from California to more extensively examine the relation between medical conditions and crash risk. Comparability of the California cohort and the Florida sample will be established, and key characteristics associated with crash involvement will be identified—e.g., demographics, health status and medical conditions, safety belt use, alcohol use, miles driven. Anticipated completion date: October 1996. Principal Investigator: Ann Dellinger, Centers for Disease Control and Prevention (770) 488-4811.

Driver Capabilities and Vehicle Operation. The effect of driver capabilities on the safe operation of motor vehicles is examined. Psychophysical capabilities are assessed through a battery of tests designed specifically to tap capabilities shown to relate to age and highway crashes. Results are expected to help improve methods for detecting drivers with abilities that may be diminished by age and provide guidance in the formulation of licensing actions that optimally balance safety and mobility needs. Project findings also will have application in the development of valid tests to assess driving ability and driving safety. Anticipated completion date: Fall 1997. Principal Investigator: Jim McKnight, National Public Services Research Institute (301) 731-9891.

Benzodiazepine Use and Older Driver Crashes. The effects of benzodiazepines on crash involvement of older drivers are being assessed as part of a surveillance system being created to permit epidemiological studies examining the influences of prescribed medications on crash risk. The surveillance system could also have application for research on the efficacy of interventions to reduce high-risk medication use. Principal Investigator: Wayne Ray, Vanderbilt University (615) 322-2017.

Dementia and Driving Performance. The relations between driving ability, crashes, age and dementia are being examined. The performance of adults with Alzheimer's Disease is being evaluated on a driving simulator and on a battery of off-road behavioral tests and compared with actual road-test scores and state driving records. Neuropsychological and psychophysical measures that best discriminate between safe and unsafe drivers are identified. Results will be used to develop fair and accurate criteria for predicting driving ability in cognitively impaired populations. Principal Investigator: Matthew Rizzo, University of Iowa (319) 356-8755.

Longitudinal Analysis of High Risk Older Drivers. Data collected as part of an earlier study of the effectiveness of Medicare-reimbursed screening and health promotion services are being linked to North Carolina driver history data to explore the impact of medical conditions on driving safety. Anticipated completion date: Fall 1996. Principal Investigator: Jane Stutts, University of North Carolina (919) 962-2202.

Prospective Cohort Analysis of Health Status and Driving Risk. A prospective cohort analysis is underway to assess the usefulness of certain brief cognitive and visual screening assessments for identifying older drivers at increased risk of crash involvement. Data were collected from 3,200 drivers aged 65 and above applying for renewal of their North Carolina driver's license from July 1994 through December 1995. Preliminary analyses show that the timed road sign recognition test and Trails

B performance are the measures most strongly correlated with recent crash involvement. Later analyses will examine the association of the various cognitive and visual function measures with future crash involvement. Anticipated completion date: Fall 1996. Principal Investigator: Jane Stutts, University of North Carolina (919) 962-2202.

DOT/DHHS Coordinating Council on Human Service Transportation

Office of Intergovernmental Affairs
Hubert Humphrey Building
200 Independence Avenue, SW
Washington, DC 20201
Contact: Dianne McSwain (202) 401-5926

Mobility Consequences of Relinquishing the Driver License. The mobility consequences expressed by older persons who reduce or stop driving will be documented. Anticipated completion date: Winter 1996. Principal Investigator: Jon Burkhardt, Ecosometrics (301) 652-2414.

National Institute on Alcohol Abuse and Alcoholism

The Willco Building
6000 Executive Blvd.
Bethesda, MD 20892
Contact: James Vaughan (301) 443-4375

Alcohol, Aging and Driving Performance. The interrelationships among aging, gender, alcohol use and driving performance are being investigated. The effects on driving performance of low levels of blood alcohol in combination with age, gender, driving complexity and sleep deprivation are being studied. In a secondary task, a modified Stroop test examines how alcohol may affect the performance of older drivers in intelligent transportation systems. Findings should be useful in counseling older persons regarding driving and alcohol use. Anticipated completion date: November 1998. Principal Investigator: Patricia F. Waller, University of Michigan (313) 764-6505.

Andrus Foundation

601 E Street NW
Washington, DC 20049
Contact: John Feather (202) 434-6200

The Andrus Foundation has a strategic planning process underway that will define new initiatives. Projects currently underway are described below.

Identify At-Risk Older Drivers. A screening instrument method for identifying at-risk older drivers is being developed. Previous work on cognition, vision and psychomotor function has been reviewed and is being incorporated as appropriate into the screening device. Anticipated completion date: Summer 1996. Principal Investigator: Rich Marottoli, Yale University (203) 785-3334.

Physician Assessment Tools. Simple tools are being identified for use in a physician's office to assess driving skills of older, functionally impaired individuals. Anticipated completion date: Summer 1996. Principal Investigators: Penny Keyl (410) 955-3479 and George Rebok, John Hopkins University.

The Safe Older Driver: Sensory and Medical Characteristics. A cross-sectional epidemiological study is being conducted to examine sensory and medical factors associated with safe and unsafe driving behavior among a random sample of community dwelling adults aged 55 plus in Marin County, California. Factors predicting subsequent safe driving are being defined and specific problem areas in mental and physical functioning as they relate to driving are being identified.

Preliminary data show that drivers who report that they self-restrict their driving vary from 40% of respondents aged 55-64 to as many as 73% of those 85 years plus. Almost one-third of all current drivers report they restrict their driving due to vision problems. Rarely are driving restrictions self-imposed due to problems with hearing, arthritis, balance and shortness of breath. It's expected that the sensory and medical characteristics found to be significant in this study can be quantified as part of a standard licensing protocol for older drivers. The results will also have application for the development of screening and training programs, graded licenses and street lighting and traffic signage standards. Anticipated completion date: Summer 1996. Principal Investigator: Catherine West, Buck Center for Research in Aging (415) 899-1800.

Predictors of Safe and Unsafe Driving in the Elderly. Visual, physical and mental function measures are identified that predict safe driving and adverse driving events when assessed over time. Using a prospective research design, this study will infer cause and effect and clarify the risk associated with sensory and medical characteristics. Data from an existing sample of older residents in Marin County, California, drawn in 1989, and a separate database that is currently being collected will be analyzed. Results are expected to be useful in developing improved clinical driver evaluations and standard licensing protocols for older drivers. Anticipated completion date: July 1997. Principal Investigator: Catherine West, Buck Center for Research in Aging (415) 899-1800.

Role of Cognitive Style in Driving. The role of cognitive style in the driving skills of young, middle-aged and older adults are examined. Relationships are assessed between field dependence-independence (cognitive style), specific driving skills (sensitivity to bodily cues under skid conditions, overcoming embeddedness in the perception of road signs and in the recognition of developing hazards, defensive driving in high speed traffic) and more general cognitive processes relevant to driving (e.g., reaction time, selective attention).

Age differences are examined in how cognitive style functioning and driving skills relate over the course of adult development. The feasibility of obtaining predictive measures of driving performance by the use of computer-aided testing technology is explored. The findings have implications for the most efficacious means of assessing driving behavior (self-reports vs. computer program vs. actual road test) and the design of training research and programs for improving older driver skills. Anticipated completion date: January 1997. Principal Investigators: Jack Demick (617) 573-8293 and Debra Harkins, Suffolk University.

ONGOING RESEARCH (cont'd)

American Association of Retired Persons (AARP)

601 E. Street NW
Washington, DC 20049
Contact: Katie Sloan (202) 434-6057

Alternative Transportation for Seniors: A Positive Option for Families and Policy Makers. Jointly funded by AARP, FTA and NHTSA, this five-month project explores the relation between the availability of alternative transportation and driving cessation. Two specific questions are addressed: (1) Does the existence of a private automobile-based transportation alternative impact the decision of older drivers to stop driving? and (2) Do older adults who rely on family and friends for transportation feel they have adequate mobility? Data are obtained from 90 structured, face-to-face interviews with older drivers, former drivers and never drivers. Principal Investigator: Katherine Freund (207) 828-8608.

AAA Foundation for Traffic Safety

1440 New York Avenue NW
Suite 201
Washington, DC 20005
Contact: Dave Willis (202) 638-5944

Older Driver Video. Production is underway on a video that encourages safe driving performance among older drivers and emphasizes the need to adjust driving patterns to current capabilities. Special attention is drawn to the interaction of alcohol and other drugs, and their effects on alertness. The video will provide an informative and up-to-date resource for use in driver improvement and refresher programs. Anticipated completion date: Winter 1996.

Public Service Announcements. A set of 30-second television PSAs are being developed to promote older driver safety. The messages are being excerpted from the older driver video that is currently in production. The PSAs will be distributed throughout North America. Anticipated completion date: Winter 1996.

Alzheimer's Association of America

919 North Michigan Avenue
Suite 1000
Chicago, Illinois 60611
Contact: Catherine M. Ekstrom
(312) 335-8700

Impact of Driving Cessation on Adults with Alzheimer's and Caregivers. This pilot project assesses the psychosocial impact of driving cessation on older adults with Alzheimer's and other dementias and their caregivers. Using motor vehicle records and community resources to identify research participants, focus group and survey data are being collected to examine behavioral antecedents and social and affective consequences of driving cessation. The use of transportation services and the role and impact of family, friends and others in driving and running errands for the "care recipient" are examined. Findings will be used to design a larger scale study and will suggest direction for needed transportation-related policies. Anticipated completion date: March 1997. Principal Investigator: David Reuben, University of California, Los Angeles (310) 825-8253.

California Department of Motor Vehicles

2415 1st Avenue
Sacramento, CA 95818
Contact: Ray Peck (916) 657-7031

Effects of Driving Restrictions and Driving Cessation on the Older Adult. This project examines the effects of driving restrictions as an alternative to license revocation when continued but limited driving is appropriate, and the impact that driving cessation has on the self-esteem of older adults. Also assessed is how family and friends are affected by the driving cessation of their older relation. The Coopersmith Self-Esteem Inventories and Rotter's Internal-External Locus of Control Scale are used. Anticipated completion date: December 1996. Project Leader: Sandra Winter (408) 245-3609.

Ontario Ministry of Transportation

Safety Research Office
2nd Floor, West Building
1201 Wilson Ave.
Downsview, Ontario M3M 1J8
Contact: Leo Tasca (416) 235-3623

Validation of the Senior Driver Research Inventory (SDRI). The SDRI was developed for the Ministry of Transportation of Ontario by Northport Associates. It currently consists of 62 self-report items which assess: (1) perception of functional deficits and the risks associated with them; (2) older driver willingness to acknowledge their functional deficits; and (3) compensatory tactics used by older drivers to minimize perceived risks and functional deficits.

A preliminary SDRI was pilot-tested. Three general scales (ability/risk, denial and compensation) were developed and subdivided into six subscales. Reliability coefficients calculated for each scale shows a moderate to high reliability. Scores on each SDRI subscale provide a measure of the subjects' ability to perceive functional deficits and associated driving risks, acknowledge their deficits and compensate for them.

SDRI scores of older drivers will be validated against their performance on the G2 road test, a valid and reliable road test developed as the advanced Level 2 exit test for Ontario's Graduated Licensing Program. Three hundred volunteers will complete the SDRI, a vision test and the G2 road test. Volunteers are aged 50 and above, and have at least 10 years driving experience but are not professional drivers. Anticipated completed date: December 1996. Principal Investigator: Jim Andersen, Engel and Townsend (416) 235-3627.

1994 Exposure Survey. Trip patterns and crash exposure are examined for Ontario drivers. Data are collected year-round so that seasonal variations in driving patterns and risk can be identified.

As part of the exposure survey, a three-day trip log was mailed to a random sample of 11,250 drivers aged 16 and above. The trip log requests information on the origin, destination, duration, length, purpose, and number of passengers for up to 6 trips per day. A small pilot test also was undertaken to evaluate an electronic in-

vehicle device known as the Autologger. Recent developments in computer software and hardware have made it worthwhile to examine the feasibility of in-vehicle data collection. Anticipated completion date: Summer 1996. Contractor: Human Factors North.

Analysis of the Useful Field of View. This study aims to develop a diagnostic benchmark for UFOV scores by estimating the range of UFOVs found in healthy individuals aged 16-85. Subjects will be screened for ocular diseases and/or brain damage. Anticipated completion date: Summer 1996. Contractor: University of Toronto.

Medical Fitness and Crash Risk. This project has four objectives: (1) survey selected jurisdictions in North America and Europe and compare the organization, content and function of their medical review programs; (2) review program evaluation studies in these jurisdictions; (3) review landmark legal decisions or impending court challenges in these jurisdictions related to physician reporting requirements; and (4) review the literature on driving performance and medical fitness relating to monocular vision; restricted visual field disorders (e.g., hemianopia and quandrantopia); seizure disorders; diabetes; prescription drug side effects of narcotic analgesics, anxiolytics and antidepressants; sleep disorders; and organic brain damage due to head injury. Anticipated completion date: Summer 1996. Contractor: Human Factors North.

Crash Involvement and Injury Outcomes by Age and Gender. The Ontario Ministry of Transportation is developing a detailed statistical profile of all crash-involved drivers from 1992-1994. The study focuses on three older age categories: 60-69, 70-79 and 80 and above. Crash involvement frequencies and patterns for these age categories are compared to each other and to drivers aged 16-19, 20-24, 25-44 and 45-59. Each age category is also subdivided by gender. Other key explanatory variables include pre-crash driver action, pre-crash vehicle maneuver, initial impact, location and environmental conditions. Dependent variables include crash frequencies, crash patterns and injury outcomes (injury/property damage only). Anticipated completion date: Summer 1996. Contractor: Ontario Ministry of Transportation.

Alberta Mental Health Research Fund, Alberta Heritage Fund for Medical Research

3125 Manulife Place
Edmonton, Alberta T5J3S4
Contact: Lois Hammond
(403) 423-5727

Driving and Dementia: Consequences of Evaluation and De-licensing. This study investigates the consequences that a driving evaluation and resulting recommendations about continued driving have for adults with dementia and their caregivers. Subjects include dementia patients who are participating in an ongoing research project that evaluates driving fitness and who have been referred to a driving evaluation by a physician. In cases where driving cessation is considered necessary, structured interviews are used to assess the psychosocial (e.g., psychological reaction, change in independence, social interactions) and financial impacts that the loss of driving privileges have for patients and caregivers. Patient reactions to the physician, the consequences for the patient-client relationship, the patient's compliance to the recommendation, and the role of the family in obtaining compliance are also addressed. For those who retained driving privileges, the emphasis is on documenting continued driving activities and reported difficulties, and changes in mobility and family relationships. The information obtained from the project will provide a basis for developing follow-up research and outreach programs.

Estimates indicate that 25-30% of dementia patients hold a valid driver's license and are currently driving at the time of diagnosis. Because dementia signifies a general loss of cognitive abilities, there is a question about the person's competence to drive. In the case of progressive dementias, such as Alzheimer's Disease, there will always be a point for which cessation of driving is necessary. This study will help us better understand the impact this transition has on these patients and their caregivers. Principal Investigator: Allen Dobbs, University of Alberta (403) 474-8840. □

UPCOMING EVENTS

October 6-9, 1996
40th Annual Conference of the Association for the Advancement of Automotive Medicine (AAAM)
Vancouver, British Columbia
Three half-day seminars are simultaneously offered on the afternoon of October 6th to address: impact biomechanics for the health care professions, medicine in traffic injury control, and epidemiology for traffic injury research. Oral presentations are scheduled for October 7-9 on various traffic safety topics, including the role of medical conditions on injuries and outcomes, and injury impairment and disability studies. Contact: AAAM, 2340 Des Plaines Avenue, Suite 106, Des Plaines, Illinois 60018; Telephone (847) 390-8927; Fax (847) 390-9962.

October 23-25, 1996
Second National Conference on Women's Travel Issues
Baltimore, Maryland
This conference is being sponsored by the Federal Highway Administration and the Women and Planning Division of the American Planning Association. It focuses on gender differences, and differences between groups of women, in travel patterns, perceptions, and safety experiences. Conference topics address collision rates and vehicle design factors, and impacts of land use issues, among others. Contact: Sandra Rosenbloom, Conference Co-Chair, 819 E. First Street, Tucson, AZ 85721; Telephone (520) 623-1705; e-mail: rosenblo@aruba.ccit.arizona. edu.

UPCOMING EVENTS (cont'd)

November 4-6, 1996
STAPP Car Crash Conference
Albuquerque, New Mexico
This conference highlights scientific, engineering and medical perspectives on crash protection. Contact: Karen Mong, Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096; Telephone (412) 772-7120; Fax (412) 776-5760.

November 17-21, 1996
49th Annual Scientific Meeting of The Gerontological Society of America
Washington, DC
The theme for this year's meeting, "Economic and Health Security for the Aging," highlights social, political, psychological and biological conditions of elders, as well as the state of research and policy initiatives. Contact: GSA, 1275 K Street NW, Suite 350, Washington, DC 20005; Telephone (202) 842-1275; Fax (202) 842-1150.

December 9-10, 1996
The Biomechanics of Impact and its Relationship to Crash Performance Standards
Chicago, IL
This course is sponsored by the Association for the Advancement of Automotive Medicine and the International Research Council on the Biomechanics of Impact. It will outline the state of knowledge on the biomechanics of impact to the main anatomical regions, the circumstances under which trauma is generated, the frequencies and severity of various injuries, and the consequences of vehicle design. Contact: Association for the Advancement of Automotive Medicine, 2340 Des Plaines Avenue, Suite 106, Des Plaines, Illinois 60018; Telephone (847) 390-8927; Fax (847) 390-9962.

January 12-16, 1997
76th Annual Transportation Research Board Meeting
Washington, DC
Two conference sessions on the safety and mobility of older persons have been tentatively approved for the upcoming meeting. The first, which will be cosponsored with the Committee on Accessible Transportation and Mobility (A1E09), deals with the mobility consequences of reducing or stopping driving. The second session focuses on programs that extend safe driving time or provide transportation alternatives for older persons. A paper session on the safe mobility of older persons is also planned, which Cynthia Owsley is chairing. Two human factors workshops on older adults and an array of subcommittee meetings round out the program. For information on the annual meeting, contact TRB, 2101 Constitution Ave. NW, Washington, DC 20418; Telephone (202) 334-2933; Fax (202) 334-2003; e-mail rallen@nas.edu; Internet http://www.nas.edu/trb/meeting/call1997.html. For information on the human factors workshops, contact Rick Pain, TRB, 2101 Constitution Ave. NW, Washington, DC 20418; Telephone (202) 334-2960; Fax (202) 334-2003; e-mail rpain@nas.edu. □

RECENT PUBLICATIONS

New Resources Available for Senior Transportation Planning, Implementation

A new series of resource materials is available to aging-service agencies, transit service providers and others interested in developing transportation services for older adults. The materials focus on services for those who no longer can or should drive, particularly those most vulnerable to being institutionalized if they lack access to transportation.

The materials were developed by the Senior Transportation Program at the Central Plains Area Agency on Aging (CPAAA) in Wichita, Kansas. They were created as part of a two-year Administration on Aging demonstration project completed last fall. The project had five specific objectives:

1. Identify gaps in senior transportation
2. Identify potential resources to fill the gaps
3. Develop practice standards for transportation programs that are responsive to the needs of frail elders and their care managers
4. Implement model programs
5. Develop information materials that can be distributed through driver licensing and law enforcement agencies, Area Agencies on Aging and other service organizations

The core resources include five guidebooks that document the project's experience in putting together model programs in Wichita and identifying others developed elsewhere around the U.S.

In addition to describing how these materials were developed and how they fit into a new or existing service, the guidebooks lay out practice standards and cover resources and regulations for service providers. The guidebooks are:

Guidebook 1—Community Practice Standards Which are Responsive to the Elderly and Their Care Managers looks at how community-based transportation services fit into the larger picture of aging services and provides information on how to match needs and resources.

Guidebook 2—A Practical Guide to Resources & Regulations for the Community Transit Provider covers federal, state and local resources and regulations.

Guidebook 3—A Positive Approach to Retirement from Driving advocates a proactive rather than reactive approach to driving cessation and offers a practical model of the approach.

Guidebook 4—Innovative and Effective Senior Transportation Models: A Resource Guide for the Community Transit Provider lists model programs in place across the country.

Guidebook 5—A Rural-Urban Transportation Interface Model describes and assesses the model developed for the tri-county area surrounding Wichita, which encompasses Kansas's most densely populated urban area and its largest rural county.

Additional resources include a 15-minute video, *Helping You Drive Safely Longer,* which includes a dramatization of what happens when physical weakness limits one's driving abilities, a demonstration of a driving assessment, and personal accounts of how the assessment and a few simple exercises permitted two individuals to maintain their driving independence. The video comes with a two-page brochure outlining tips for facilitators.

Also available are a brochure titled *Planning for the Day You Retire From Driving,* which encourages seniors to plan ahead for this situation and includes a self-assessment test of driving abilities; and a training guide, *Older Drivers in Crisis: A Handbook for Peer Counselors,* which can be used as a supplement to a volunteer peer counseling program.

These resources and others, including survey instruments and the final report, are available to the public through the end of September. For information, contact: Patti Davis, CPAAA, 510 N. Main, Wichita, KS; Telephone (316) 383-7824; Fax (316) 383-7757. □

Other Recent Publications

Ball, K., Owsley, C., Thomas, B., Graves, M. (1995) Predictors of useful field of view test performance. *The Gerontologist* 35 (Special Issue 1), 365.

Cerrellli, E.C. (1995) Crash data and rates for age-sex groups of drivers, 1994. Research Note. National Highway Traffic Safety Administration, Washington, DC.

Eberhard, J.W. (1996) Safe mobility for senior citizens. *International Association of Traffic and Safety Sciences* 20:1-9.

Fitten, L.J., Perryman, K.M., Wilkinson, C.J., Little, R.J., Burns, M.M., Pachana, N., Mervis, J.R., Malmgren, R., Siembieda, D.W., Ganzell, S. (1995) Alzheimer and vascular dementias and driving: a prospective road and laboratory study. *The Journal of the American Medical Association* 273:1360-1365.

Foley, D.J., Wallace, R.B., Eberhard, J.W. (1995) Risk factors for motor vehicle crashes among older drivers in a rural community. *Journal of the American Geriatric Society* 43:776-781.

Green, F.A., Koppa, R.J., Zellner, R.D., Huchingson, R.D., Congleton, J.J., and Garcia-Diaz, A. (1995) Field and laboratory studies of warning symbol sign legibility distance. Report No. SWUTC/721917-1, Texas Transportation Institute, Texas A&M University, College Station, TX 77843-3135.

Hennesey, D.F. (1996) Vision testing of renewal applicants: crashes predicted when compensation for impairment is inadequate. Presented at Transportation Research Board Annual Meeting, Washington, DC.

Hu, P.S., Trumble, D., Foley, D., Eberhard, J.W. (1996) Vehicle crashes among older drivers. Presented at Transportation Research Board Annual Meeting, Washington, DC.

Janke, M.K. (1995) Age-related disabilities that may impair driving and their assessment. California Department of Motor Vehicles, Sacramento, CA.

Lange, J.E., McKnight, A.J. (1996) Age-based road test policy evaluation. Presented at Transportation Research Board Annual Meeting, Washington, DC.

Levy, D.T., Vernick, J.S., Howard, K.A. (1995) Relationship between driver's license renewal policies and fatal crashes involving drivers 70 years or older. *The Journal of the American Medical Association* 274: 1026-1030.

Marottoli, R., Mendes de Leon, C., Williams, C., Berkman, L.F., Tinetti, M.E. (1995) Consequences of driving cessation among elderly individuals. Presented at the American Geriatrics Society Meeting, Washington, DC.

Owsley, C. (in press) Quality of life and vision impairment: driving. In S. Drance (Ed.) *Encounters in Glaucoma Research,* Fort Worth, Texas: Alcon International.

Owsley, C., Ball, K., Keeton, D.M. (1995) Relationship between visual sensitivity and target localization in older adults. *Vision Research* 35:579-587.

Owsley, C., Ball, K., Thomas, B., Graves, M. (1995) Driving avoidance, functional impairment and crash risk in older drivers. *The Gerontologist* 35 (Special Issue 1): 211.

Pietrucha, M.T., Hostetler, R.S., Staplin, L., Obermeyer, M. (1995) Pavement markings and delineation for older drivers. Report No. FHWA-RD-94-145. Federal Highway Administration, Washington DC.

Reuben, D., St. George, P. (1996) Driving and dementia: California's approach to a medical policy dilemma. *Western Journal of Medicine* 111-121.

Rizzo, M., Dingus, T. (1996) Driving in neurological disease. *The Neurologist* 2:1-20.

Sims, R.V., Owsley, C., Allman, R., Ball, K., Smoot, T. (1996) Medical factors and driving problems in older adults. Presented at Annual Meeting of Transportation Research Board, Washington, DC.

Szlyk, J.P., Pizzimenti, C.E., Fishman, G.A., Kelsch, R., Wetzel, L.C., Kagan, S., Ho, K. (1995) A comparison of driving in older subjects with and without age-related macular degeneration*. Archives of Ophthalmology* 113:1033-1040.

Szlyk, J.P., Seiple, W., Viana, M. (1995) Relative effects of age and compromised vision on driving performance. *Human Factors* 37: 430-436.

Seiple, W., Szlyk, J.P., Wang, S., Holopigian, K. (in press) Functional visual fields: eccentricity independent losses in older adults. *Vision Research*.

Trobe, J.D., Waller, P.F., Cook-Flannagan, C.A., Teshima, S.M., Bieliauskas, L.A. (1996) Crashes and violations among drivers with Alzheimer Disease. *Archives of Neurology* 53:411-416. □

Compendium of Research and Evaluations in Traffic Safety

An annotated bibliography of behavioral research and evaluations conducted by NHTSA's Office of Program Development and Evaluation (OPDE) over the past 10 years is now available. Entitled *Compendium of Traffic Safety Research Projects: A Decade and Beyond,* the publication briefly describes more than 200 OPDE projects. In addition to older drivers, areas covered include substance-impaired driving, occupant protection, and novice and young drivers. Contact: OPDE, NHTSA, NTS-30, 400 Seventh St. SW, Washington DC 20590; Fax: (202) 366-7096; Internet: http://www. nhtsa.dot.gov/ □

Important Dates and Deadlines Inside!

Open Immediately!

Beverly Foundation
44 South Mentor Avenue
Pasadena, CA 91106-2902

—

Newsletter Editorial Office
Committee on the Safe Mobility of
Older Persons (Committee A3B13)
Transportation Research Board

NONPROFIT ORG.
U.S. POSTAGE
PAID
PASADENA, CA
PERMIT NO. 53